

ABSTRACT OF THE DISCLOSURE

Methods and compositions for evaluating the affinity of one or more ligands of interest are provided. In particular, a ligand sensor device (LSD) comprising a sensor coupled to a peptide of interest is provided. Assays using the LSD allow detection of ligand-peptide interactions directly in tissue samples and thus provide an *in vitro* assay to characterize peptide ligands. The LSD and assays find particular use in characterizing cell-specific peptides isolated from *in vivo* screening in animals to determine their suitability for use in human therapy.

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